

NAME _____

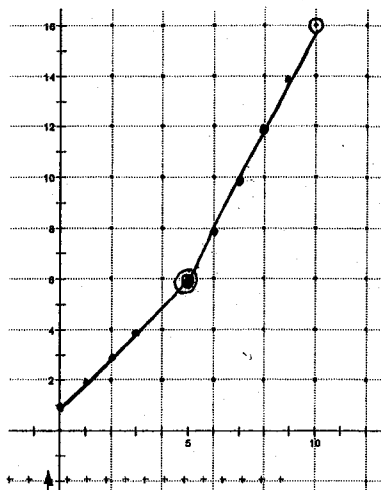
KEY

Piecewise Functions

$$1. f(x) = \begin{cases} x+1 & \text{if } 0 \leq x < 5 \\ 2x-4 & \text{if } 5 \leq x < 10 \end{cases}$$

Domain: $0 \leq x < 10 = [0, 10)$

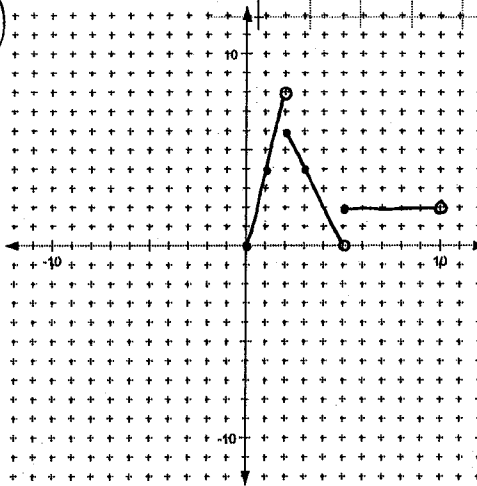
Range: $1 \leq y < 16 = [1, 16)$



$$2. f(x) = \begin{cases} 4x & \text{if } 0 \leq x < 2 \\ -2x+10 & \text{if } 2 \leq x < 5 \\ 2 & \text{if } 5 \leq x < 10 \end{cases}$$

D = $0 \leq x < 10 = [0, 10)$

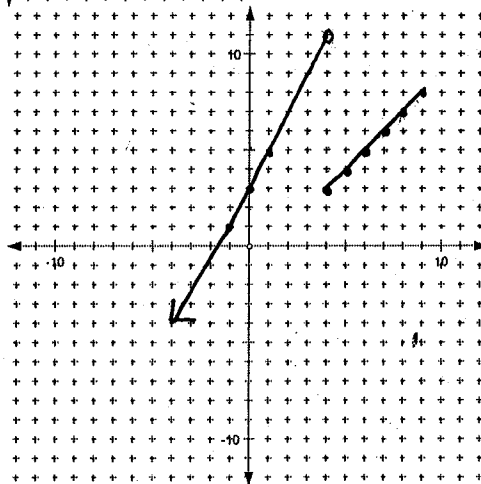
R = $0 \leq y < 8 = [0, 8)$



$$3. k(x) = \begin{cases} 2x+3 & \text{if } x < 4 \\ x-1 & \text{if } 4 \leq x \leq 9 \end{cases}$$

Domain: $x \leq 9 = (-\infty, 9]$

Range: $y < 11 = (-\infty, 11)$



$$4. b(x) = \begin{cases} 2 & \text{if } x < 1 \\ 2x & \text{if } 1 \leq x \leq 3 \\ 7 - \frac{1}{3}x & \text{if } x > 3 \end{cases}$$

Domain: $\mathbb{R} = (-\infty, \infty)$

Range: $y \leq 6 = (-\infty, 6]$

